REMARKS

As an initial matter, Applicant appreciates the thorough examination by the Examiner.

The Examiner's Objections

The Examiner objects to the drawings stating that the protrusions, ridges and valleys portions are not shown. Applicant has canceled the claims in which the protrusions, ridges and valleys portions are set forth (i.e., claims 2-4, 6-8, and 10-12). Accordingly, Applicant has not submitted corrected drawings sheets.

The Examiner's Rejections

The Examiner rejects claims 1-9 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,754,992 to Byfield.

The Examiner also rejects claims 9-12 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. U.S. Patent No. 6,754,992 to Byfield in view of U.S. Patent No. 7,409,800 to Budge.

In response to the Examiner's rejections with respect to 35 U.S.C. §102(b), Applicant has canceled claims 1-4 and 6-12 and submits new claim 13. Applicant addresses the Examiner's concerns herein below.

In response to the Examiner's rejections with respect to 35 U.S.C. §103(a), Applicant has canceled claims 9-12. Accordingly, Applicant has overcome the rejections under 35 U.S.C. §103(a)

Claim 5 is Not Anticipated by Byfield

The Examiner rejects, among others, independent claim 5 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,754,992 to Byfield. Applicant disagrees with the Examiner's assessment of the structure of Byfield for the reasons set forth below.

The Object and Utility of Byfield and the Present Invention are Different

Byfield is an apparatus for securely connecting a number of structural members one to the other. In contrast, the object of the present invention is to increase and enhance the adhesive strength between concrete and structural members by completely burying the present invention in concrete. Another object of the present invention is to increase the entire rigidity of a structure as it functions like a reinforcing bar in concrete.

In other words, whereas the cited invention has the object to easily connect the structural members (e.g., beams or columns), the present invention has the objects to increase the adhesive strength between concrete and members while being buried in concrete and to improve the safety of the structure.

The Structure of Byfield and the Present Invention are Different

In the connecting apparatus of the cited invention, a flange 4 and a web 5 are formed at right angles to each other, and slots 6a and 6b are formed in the flange and web respectively. Studs 11 are received in the slots 6a and 6b respectively so that the structural members are connected.

In the cited invention, connecting members are connected to one another as the studs 11 are received in the slots 6a and 6b. The slots 6a and 6b each have a lower portion and an upper portion. The lower portion is larger than the upper portion in width. Heads of the studs 11 are received in the lower portions of the slots 6a and 6b,

respectively, and the members are allowed to move in the direction of the upper portions. As a result, a shank of each stud 11 is received in the upper portion, so that two members are connected to each other. The upper portion and lower portion of each of the slots 6a and 6b are different from each other in width because the head and shank of the stud 11 are different from each other in width.

In contrast, the structure of the present invention will be described with reference to the disclosure illustrated in FIGS. 2a and 2b as follows.

In the present invention, a flange and a web are formed in one body and bent at right angles. Furthermore, the flange is bent alternately in both directions instead of any one direction. That is, "flange pieces" of the present invention are formed outward the web, along the web, and the flange pieces are formed in an alternating sequence. In contrast, the "flange pieces" of the cited invention merely mean that a plurality of flanges is formed. Therefore, the "flange pieces" of the present invention and the cited invention are completely differently in structure and function.

Furthermore, a plurality of holes is formed in the web of the present invention. A connector according to the present invention is a member completely buried in concrete. When concrete is poured, the plurality of holes is filled with concrete. Therefore, the member according to the present invention is more strongly bonded with concrete. As the plurality of holes is constructed for the adhesion between the member and concrete, the holes may vary in different shapes, such as a round shape, a triangle shape, a square shape, a hexagonal shape or the like.

In contrast, the slots 6a and 6b of the cited invention are constructed to have two round holes (which are different from each other in width). Otherwise, the cited invention cannot achieve the object of the invention. Consequently, the construction of the holes in the present invention has a completely different operation as compared to that of the slots 6a and 6b in the cited invention.

The Function and Effect of Byfield and the Present Invention are Different

The cited invention relates to an apparatus for connecting members and is characterized in that the upper portion of the apparatus is formed to be different from the lower portion in width. This technical characteristic reflects that the head of the stud 11 is different from the shank of the stud 11 in width. Therefore, the cited invention has the function and effect of more easily connecting the structural members made of steel materials (for example, steel beams, steel columns or the like).

However, the function and effect of the present invention are different from the function and effect of the cited invention. The present invention is structured to be buried in concrete. The present invention has the effect of increasing the adhesive strength between the members and concrete by the "flange pieces" formed in an alternating sequence and the "holes." The present invention has the further effect of improving the safety of the structure since the "connector" according to the present invention is buried in concrete, to operate as the reinforcing bar.

Byfield Fails to Disclose Flange Pieces Extending Outwardly Along the Length of the Web in an Alternating Fashion

Applicant submits new dependent claim 13 to further distinguish the present invention from the cited art. As set forth in new claim 7 and supported by page 8, lines 6-10 and Figures 2a and 2b, the present invention includes flange pieces 16, 18 that extend outwardly along the length of one side of the web 20 in an alternating sequence such that the alternating flange pieces define a plurality of spaces between said flange pieces. As configured, the flange pieces are perpendicular to the web.

In contrast, Byfield discloses a connector for providing a connection between two members comprising a web 25, a flange 24, and slots 6a, 6b for receiving studs 11 which protrude from one outer flange surface. Byfield fails to disclose a flange or flange piece that extends outwardly from one side of the web in an alternating sequence—i.e., flange

pieces that extend perpendicular to the web. Accordingly, Bridges does not disclose each and every element, including the limitations set forth in claims 5 and 13, and therefore must be removed as a §102(b) reference.

Claims 5 and 13 are Patentable

Independent claim 5 and new claim 13 recite a sheer connector having a flange and a web, wherein the flange is defined by a plurality of flange pieces that are formed in a biased shape. As configured and claimed the flange pieces extend outwardly along the length of one side of the web in an alternating sequence such that the alternating flange pieces define a plurality of spaces between the flange pieces. Thus, the flange pieces extend perpendicular to the web. Byfield fails to disclose any such configuration. Thus, Applicants submit that claims 5 and 13 are not anticipated by Byfield and are now allowable.

CONCLUSION

The cited invention relates to an apparatus for connecting structural members, whereas the present invention relates to a connector being buried in concrete, to improve the adhesive strength between the members and concrete and the safety of the structure. Therefore, the two inventions are completely different from each other with respect to their objectives.

The "flange pieces" of the cited invention simply means "a plurality of flanges", whereas the "flange pieces" of the present invention means "the configuration of a plurality of flanges formed in an alternating sequence in the outward direction of the web". Therefore, the two inventions are completely different from each other with respect to their configuration.

Furthermore, the "holes" of the cited invention are structured to receive the studs, whereas the "holes" of the present invention is structured to be filled with concrete. Therefore, the two inventions are completely different from each other with respect to their acting effects.

Simply stated, the cited invention has the effect of easily connecting the structural members, whereas the present invention has the effect of improving the adhesive strength with concrete and the safety of the structure.

As stated above, the present invention is completely different from the cited invention with respect to the objects, configuration and effects. Accordingly, the present invention is not anticipated by the cited art.

Based on foregoing amendments and arguments, Applicant submits that pending claims 5 and 13 are now in immediate condition for allowance, and the same is respectfully requested.

Respectfully submitted,

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